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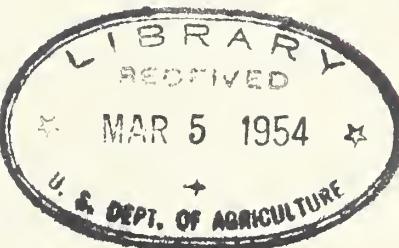
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THE SOYA WURST PROGRAM

A Case Study

By

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Washington, D. C.
October 1953

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THE SOYA WURST PROGRAM

A Case Study of the Attempt to Introduce a New Food Item in West Germany

INTRODUCTION

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A food article envisioned as "potentially the greatest innovation in human feeding since people began to cook" came on the market in Western Germany in the early spring of 1949. It was the result of a project that for months had joined the efforts of officials of the German Administration of Economics and Food, Agriculture and Forestry and of the Allied Military Government. The primary objective of the project was to correct a serious protein deficiency in the German diet. The plan was to add protein through the use of a food product based on extending meat sausage with high-grade vegetable proteins found in raw materials available in Germany and in by-products of food and industrial processes. Despite initial claims for the final product and the fact that the technological problems of the project were successfully met, the venture soon failed. Why was it that a food product that offered so much to humanity was not accepted by the German people? The facts in the case seem to be as follows:

By the fall of 1948 the over-all food-supply situation in Western Germany had begun to show appreciable improvement over what it had been in the spring of the year and earlier in the occupation. This improvement was particularly noticeable in the higher calorie content of the food ration per person. Although German and Allied officials were gratified over this progress, they realized that the food problem was not yet solved. They knew that the amount of food available per person was still far below prewar standards and that the diet was far from balanced.

One of the worst aspects of the ration was its severe deficiency in protein. This lack had been a cause for complaint ever since the end of the war and was a serious nutritional problem. Over-all consumption of meat in Germany had fallen from a prewar of 45 kilos per capita per year to roughly 10 kilos, with the monthly meat ration limited to 400 to 600 grams, or 15 to 21 ounces, per person.^{1/} Black market meat sold from 5 to 8 Deutsche Marks per pound, an exorbitant price for the average consumer. Milk and cheese consumption was only a fraction of what it had been before the war. People were poor and had dire need for palatable and cheap protein-rich foods.

Under these conditions Military Government found itself faced with a moral obligation to improve the food ration. ^{2/} German officials suggested that the protein problem be solved by importing meat, but allied officials insisted this solution was impossible, owing to the high cost of meat and other animal proteins as well as to the world shortage of supplies. In their opinion, the

^{1/} One kilo = 2.2 pounds.

^{2/} For the sake of simplicity and clarity the term "Military Government" is used throughout this case study. Actually, the Office of the United States High Commissioner for Germany took over the U. S. Zone of Germany during the summer of 1949, and the Economic Cooperation Administration (ECA) aid was funneled through both organizations.

amount of money that the United States and British Governments had provided for financing food imports into Germany was too small even if the world supply were plentiful. Neither was it possible, owing to the lack of feed for live-stock, to greatly increase local production of protein foods. The outlook was not bright. In fact, it appeared that it might take 5 to 8 years to increase the meat supply to 18-20 kilos per capita. Gwynn Garnett, assistant chief of the Food, Agriculture and Forestry Group at the Bipartite Control Office of the United States and British military governments in Germany and the person in charge of the procurement of food from abroad, sized up the situation in these words, "A large protein deficit in the present German food ration exists, and neither from import nor production, from fish nor fowl, can these deficits be covered."

Mr. Garnett, the key American figure in this episode, pondered the problem. Germany had an animal protein shortage, true; but, on the other hand, Germany had an ample supply of raw materials containing the food nutrients needed in the ration. These products were highly nutritious, yet inexpensive, primarily because they were by-products of food and industrial processes. For example, valuable proteins were to be secured from available soybeans and peanuts that had been imported primarily for oil; from yeast made from molasses, whey, and wood and textile by-products; from fish by-products; from grains and other possible sources. Mr. Garnett asked himself, "Why can't these proteins be substituted for animal proteins in the diet?"

Development of a Program

There had been considerable experimental work in the United States and the United Kingdom, before and during the war, on vegetable protein foods. Mr. Garnett knew about this work. Why not have the German technicians apply their native ingenuity and knowledge, fortified with information from abroad, to develop protein-rich foods that were palatable, cheap and acceptable? Such foods would not only supply protein but fill the need for a pillar food around which, with potatoes and vegetables, the housewife could build a tasty meal.

Mr. Garnett's idea was accepted by the German food and agriculture administration. In retrospect it is clear that this acceptance was not too enthusiastic, but at the time Mr. Garnett thought everything was fine. He reported that "the German Administration and private enterprise of the Bi-zone undertook the problem with earnestness and willingness." The problem to be solved seemed to be purely technical in nature.

The over-all program that was worked out had three broad goals:

- (1) Development of a substitute for milk, especially for use in industrial areas with a milk shortage; (2) extension of the supply of meat sausage by adding high-grade balanced proteins; and (3) development of all-vegetable-proteins. Among the several technical problems to be solved were those attendant on the production of a suitable soya product, the hydrolyzation of peanut oil, and the manufacture of yeast from several sources. Soya, because of its high protein value and the large quantities in which it was imported to supply the fat ration of the country, became the keystone of the whole program. Germany, which before the war had no protein deficit

and during the war had had little contact with the world's progress in food technology, had not developed such techniques for making high-grade soya flour as had been accomplished in the United States and elsewhere. Thus the first problem was how to improve the processes for extracting soya oil and for making soya flour. Two men were sent to the United States to learn techniques, which were then adopted in German plants.

This case study is concerned only with what happened to the second part of the over-all program, the sausage project. In passing, however, it should be said that the first part of the program - the effort to find a milk substitute - gained limited success, particularly among the poor in large cities. As for the third part of the program, the writer pleads ignorance of the outcome.

In the sausage project, which came to be known as the soya wurst project, the plan was not only to meet the demand for more meat by adding soya flour to sausage but to increase the protein content of the German diet. Experiments were begun in a few large sausage factories with a recipe based on what had been learned in balancing proteins from the milk products and including defatted soya, food yeasts, fat hydrolyzed proteins, cereals, and spices. A serious obstacle developed in that the water absorption of the protein substance was inadequate to give proper texture to the product, but this disadvantage was soon corrected under the diligent work of German technicians.

Five people came to play leading roles in promoting the program: Gwynn Garnett; F. D. Mitchell, Mr. Garnett's assistant and an Englishman; Heinrich Hensen, Chief of the Office for Scientific and Technical Matters in Food Economy of the German Administration of Economics and Food, Agriculture and Forestry; William Bening, head of the German Soybean Institute; and Karl Nerger of Kellinghausen, near Hamburg, a leading German meat manufacturer. ^{3/} Garnett, Mitchell and Hensen functioned largely in planning and administrating the program; whereas Mr. Nerger did almost all the work of developing a suitable soya wurst and promoting the product. Bening's role was one of rendering technical as well as promotional advice.

Mr. Nerger entered into the arrangement enthusiastically, for he had already carried on experimental work in this field before the war and had hopes of bringing it to a successful conclusion. The other cooperating meat manufacturers were far less enthusiastic about the new venture, for reasons that will come out later in this account.

Mr. Nerger, who knew from experience that he could not use the soybean in its organic form, proceeded to extract the oil and bitter ingredients, leaving a residue of protein. By a special formula he made this residue into a product that came to be called Nerger Meal. Nerger learned that it was quite

^{3/} Dr. Bening was also a representative of the American Soybean Association which was trying to increase exports of soya flour to Germany. Military Government and the German Administration called upon him for advice in the program because of his technical knowledge in the soya field, and his interest from a business standpoint in seeing the effort succeed.

impossible to mix this meal, which contained only 8 percent water, with meat, which contains approximately 80 percent water. Consequently he mixed his meal with fat, water, and gluten material to develop a product that would mix with meat. He finally succeeded in getting a proper product, which he called Soya Fleisch, and this he mixed with meat to produce the soya wurst. The soya wurst could contain various amounts of Soya Fleisch, up to 90 percent of its composition.

After some difficulties Mr. Nerger succeeded in developing a soya wurst of excellent quality. Some of the other meat manufacturing firms were also reporting success albeit limited, and Mr. Garnett, Dr. Bening, and Dr. Hensen felt that the time was ripe to call a meeting of key people to discuss and promote the results of the experimental work. Accordingly, Dr. Hensen, in his official capacity, called a session of representatives from various groups. The assembly that came together, about 90 people in all, consisted of members of parliament, trade unions, farmer organizations, and consumer groups; butchers; meat manufacturers; and representatives from Military Government and from the German Administration of Economics and Food, Agriculture and Forestry. The five leaders of the sausage program had high hopes that this group, which cut across German society, would sample the results of the experimental work and vote overwhelmingly for promotion of the product. Strangely enough, the result of this session was largely negative and discouraging. In looking back, Mr. Nerger claims that meat manufacturers opposed to the program saw to it that only the poorer specimens of soya wurst were sampled.

Despite this setback, Mr. Garnett, Dr. Bening and Dr. Hensen were firmly convinced that they had developed an excellent product and that the program should not be sacrificed without further promotional trials. Consequently Garnett and Hensen decided, first, to have Mr. Nerger produce all the basic soya fleisch so that the quality of the soya wurst could be better controlled and, second, to hold more tests before embarking on a definite production and distribution program.

As a result of these decisions, three more taste tests were arranged: One, for members of the German Administration of Economics and Food, Agriculture and Forestry, in Frankfurt on February 9, 1949; another for representative housewives from the Bi-Zone on February 10; and the third, for the processing trade, in Hanover on February 11, 1949.

Mr. Garnett, in reporting on these tests, said, "It was agreed that very fine boiling, frying and liver sausage with 50 percent meat and 50 percent vegetable protein base could be produced by any butcher to give a cheap sausage with the same protein, fat, and caloric value as meat. With this progress, the second part of the over-all program, the meat extender, has been achieved. As soon as commercial quantities of spices can be imported and the 30,000 butchers in the Bi-Zone trained in the preparation of these products, this extra food can be placed on the ration, not as a substitute, but as a supplement to the ration." At this point in the program Mr. Garnett and his associates were clearly optimistic. Success seemed just around the corner. The hard work was done. They had produced a soya wurst which, in Mr. Nerger's words, "no man could tell from a sausage of full meat content." It was the equivalent of the regular meat sausage in terms of taste, texture, and nutrition. Only a trained technician with good laboratory facilities could tell one from the other. Best of all, the new product was cheap: a pound of regular liver

sausage retailed at 2.40 DM. (Deutsche Marks); the soya sausage could be sold for 1.60 DM. ^{4/} It seemed that all that was necessary was to train butchers in the preparation of the soya wurst, produce the sausage in quantity, and get it distributed to places where the German public could buy it.

In fact, Mr. Garnett believed that within a short time the soya wurst program would succeed in enlarging the consumption of protein foods from one to two kilos per person per month. He reported to his superiors that "adoption of this program to add supplemental proteins to the diet in the form of new foods is potentially a great innovation in human feeding. To the synthesized products the deficits of the diet in protein, mineral and vitamins can be added at will. Not only is the program potentially of great importance for Western Germany, but for the countries of Western Europe and all poor people, since it provides them with the essential nutrients at low cost. Germany faces a period of austerity in the years to come. By accepting a part of their protein requirements in cheaper form, they can save foreign exchange and use it for other raw materials not available in Germany for raising the general standard of living."

The decision was made to go ahead on a commercial production and distribution program, and Mr. Garnett began to turn his attention to other duties. It seemed to him that the remaining tasks were relatively simple, ones that the German administration and private enterprise should and could handle without much participation from Military Government. He had pictured the problem as one of overcoming technical obstacles. ^{5/} Now that these were surmounted, the protein problem appeared to be solved. Unfortunately the coming course of events did not bear out this assumption.

Appearance of Obstacles and Opposition Groups

Once the decision had been made to embark on production and distribution, numerous questions began to arise. Who was to be permitted to manufacture the soya sausage? Under what name was the product to be marketed? Would meat ration coupons be required? Where should distribution of the product begin? Many of the questions were handled without trouble. But a few, like the one that involved the rationing matter, were not so easy. The meat trade wanted to sell the soya sausage, which consisted of only 50 percent meat, off the meat ration, that is, without collecting meat coupons. Military Government, on the other hand, felt strongly that meat ration coupons should be collected in accordance with the actual meat content of the wurst. The German administration supported the meat trade's point of view but, at the insistence of Military Government, ordered the collection of half as many meat coupons for soya sausage as for all-meat sausage.

^{4/} One DM is approximately 24 cents.

^{5/} It should be pointed out that Hensen, Bening and Nerger held identical views. It is so normal and necessary to inquire into marketability, consumer acceptance and related matters before a program of development and production is undertaken that some readers may wonder from the events that follow why these aspects did not receive more attention in the planning process. In retrospect it is not clear, but some observers cite the following: (1) The technical problems of developing a suitable product loomed so large that all other considerations seemed minor in importance; (2) the leaders of the project were essentially technicians in training and outlook; and (3) the urgency of the need to get something done.

In view of the success Mr. Nerger had had in developing basic formulas, it was decided that he should produce all the soya fleisch in his factory. This basic product would be distributed to butchers, who would add meat to it in the proper proportion to make the soya wurst. It was agreed that full scale distribution would be begun and that as many butchers should be brought into the program as possible. Most of the mechanics of promoting production and distribution fell to Mr. Nerger: the Government felt that in a free enterprise system this was a task for the trade.

Promotion of the program proved to be an arduous task. The first step was to secure the cooperation and participation of butchers. One of Nerger's first moves was to approach the powerful Butcher's Guild. The Guild, a carry-over from medieval days, was a social organization with certain economic and political overtones. Nerger knew that he needed the sanction of this organization because of its prestige and its influence with its members, which included all butchers. His reception at the Guild's central headquarters in Frankfurt appeared to be cordial and the officials promised to lend their support in helping Nerger make contacts with the local guilds in the various towns and cities of Western Germany. It was decided to begin operations with about 3,000 to 4,000 of the 30,000 butchers in Western Germany and then gradually expand the program as demand and Nerger's production capacity increased.

Having accomplished all that he could at the central office of the Guild in Frankfurt, Nerger then proceeded to seek the support of the local guild organizations. Some received his plans with interest and others turned them down flatly. The Bavarian guilds did not want anything to do with the project and refused to license its members to produce soya wurst. The guild in the city of Bremen was similarly disposed. Guilds in other areas were more receptive and helped Nerger make arrangements with individual butchers to go ahead on the program. Even in these cases, however, there was little real enthusiasm.

While Nerger was busy establishing a production and distribution system for the new product, other questions and problems began to arise. One of the more serious ones came from the official veterinarians and public health officials. They insisted that the new product must be clearly labeled "soya wurst" and be wrapped in a paper of different color to distinguish it from regular sausages so that the public would be fully protected from misrepresentation. They pointed to a German law of 1887 that forbade the mixing of meat and other ingredients without declaring it. Upon investigation, the legal situation showed itself even more complicated: some states had even older laws that specified what could or could not be added to meat in manufacturing sausages. In such states, apparently, new legislation would have to be passed to permit the sale of the soya wurst.

Garnett and his associates were dismayed by this unexpected development. It had not occurred to them that German laws might be a stumbling block. Nerger, who by now was deeply involved financially in the new program, called on Dr. Schlangen-Schoningen, the German minister of food and agriculture, to see what could be done. The minister was sympathetic but pointed out that the veterinarians had no choice except to enforce the various restrictive laws.

The new political arrangement in Western Germany, which gave the individual state a high degree of autonomy, made it impossible for the federal government

to issue a decree or pass a law rectifying the situation. Similarly, Military Government, which for some months had been turning back authority and responsibility to the German government, federal and state, was committed to a policy of permitting the Germans to manage their own internal matters. Under these circumstances Garnett and his associates in Military Government and the federal administration of food and agriculture could do no more than write letters to authorities in the various states, appealing for changes in the laws. Gradually, as pressures were brought to bear on the lawmakers by various interest groups, these changes in legislation were made, though in some cases rather grudgingly.

Finally, despite these legal difficulties and others, soya wurst began to appear on markets in the states of Niedersachsen, Schleswig-Holstein, Bremen, Hessen, and Wurttemberg-Baden. It bore the name "soya wurst" and was wrapped in paper with green stripes. The demand for the new product was brisk in a few places but in most it was slow. At the beginning of the program 3,000 butchers were participating; a year later, in early 1950, only 100 were handling the product. In that year less than 30,000 tons of soya wurst had been produced and sold. By the summer of 1950 the program had collapsed completely.

Factors in the Outcome

In order to better understand why events took the turn they did, it will be necessary to consider a few facts about circumstances that prevailed at the time the soya wurst program was launched.

In the first place, the German consumer already had had two unfortunate experiences with soya, and these he had not forgotten. The German army in the early years of World War II had experimented on a large scale in the use of a product made of soya flour with meat. During the course of these experiments large numbers of German men had been fed various soya-meat products, none of which they had found particularly palatable. The second experience had come when Military Government and the German administration of food and agriculture attempted to improve the bread supply by adding soya flour and corn meal to wheat and rye flour. This effort, too, had ended in failure.

As a result of these two experiences, the name "soya" was extremely unpopular with many Germany consumers, and the sight of the word "soya" in front of "wurst" was enough to prejudice many consumers against even sampling the product. The strength of this prejudice became evident as the program developed. In a few trials where the word "soya" was omitted, the product tended to be accepted fairly readily.

A second factor in the outcome of the project, one of considerable importance, centered about currency reform. June 1948 brought the Germans, for the first time since the war, a strong, readily acceptable currency. Formerly, farmers had been extremely reluctant to part with good meat for almost worthless money; but now, with real money to reward them, they brought their meat to the market in greater quantities than Military Government had thought existed and were even willing to increase production. German consumers, on the other hand, wanted to get away from the ersatz foods they had been forced to eat for years and were glad to part with their hard-earned money for real meat.

A third factor we have already mentioned briefly, but it needs more amplification at this point. It dealt with the interests of German administrators in the program and with German-American relationships. As we have seen, the program was planned, sponsored, and largely conducted by five men; all of whom were firm believers in the program and came to have a strong respect for one another. Of this group, only Dr. Hensen was a member of the German administration, at the federal level. As time progressed, he found himself practically alone in governmental circles in actively supporting the program. From the beginning Dr. Hensen's colleagues, whether at the federal or state level, had shown little real enthusiasm for the program. As the program developed, the opposition of various pressure groups, such as the Butchers' Guild, consumer organizations, association of meat manufacturers, and official veterinarians began to be felt by government officials, who, as a result, did very little to make the program successful.

The policy of Military Government not to interfere, except as a last resort, with the German handling of all internal food problems was a marked departure from policy in the early years of the occupation. Now the Germans had a new freedom of activity. With this new freedom came a change in attitudes: the Germans intended to run their own show. Ideas and programs with an American frame of reference, such as the soya wurst program, were handicapped by this very fact. The cleavage in attitudes of Germans and Americans developed by the war had not been a serious factor in program execution under terms of direct control, but under conditions existing in early 1949, this cleavage assumed more importance. It can be said that this was a natural reaction of the German food and agriculture administration toward Military Government. And, finally, there was the political angle. Many German governmental officials were new in their jobs. They felt that the security of their positions might be in jeopardy if they strongly supported a program that was encountering such opposition from various pressure groups. Also many politicians reasoned that votes might be lost in popular elections by supporting programs with an American frame of reference.

Repercussions in the United States

The news about the new "ersatz" foods in Germany hit the front pages of American newspapers with considerable impact, and had repercussions that neither Mr. Garnett nor the reporter had anticipated. The message was considered sensational. As a consequence, two special publics, one composed of scientific men and the other of worried meat manufacturers, entered the picture with the result that numerous articles were written in stateside papers on the merits of the project. Inquiries of all natures for further information began flowing to Germany.

In some respects this aspect of the Soya Wurst affair is as interesting as the developments in Germany. It seems that practically all of the variables effecting impact of communication came into play. The content of the original communication and succeeding articles, and the pre-disposition of certain publics were particularly significant. Three tendencies of newspaper reporting were evident, namely, skeletonization of news, conformance of news and editorial articles, and a fast tendency toward closure on the merits of the new product. A normative content analysis of the articles would have been appropriate - for

there were signs of a lack of fairness, truthfulness and adequacy of treatment in handling the news involved.

Perhaps, the best way to indicate the furor in the papers is to quote excerpts from the New York Times. The original story dispatched from Frankfurt, Germany, appeared on page 1 of the Sunday issue of the New York Times, February 12, 1949, under a two column heading:

"ERSATZ" MILK AND MEAT WITH TASTE OF GENUINE FOODS MADE IN GERMANY

by Jack Raymond

"This is potentially the greatest innovation in human feeding since people began to cook," declared Gwynn Garnett, an official in the United States Military Government Food and Agriculture Branch. "That is a big statement," he agreed, "but it is true. These synthetic foods can be a boon not only to the people of Germany but to hungry areas throughout the world. They are cheap and could be useful in the United States too."

"We can even produce "roast beef" so that you would not know the difference from the real thing, he declared. (Garnett later denied making this statement).

"An interesting sidelight was that in all the efforts for synthetic foods, the Germans who by reputation were great enthusiasts of "ersatz" products, definitely followed the leads and inspiration of American and British officials, Mr. Garnett in particular."

"Mr. Garnett said a fund of 20 million dollars had been made available for a national food research program through the Economic Cooperation Administration." (This was an error in reporting causing much misunderstanding - the amount was for all of Europe.)

A second article appeared one week later, Sunday February 20, 1949, under a two column heading in the "Science in Review" portion of the New York Times entitled "ERSATZ FOOD DEVELOPED BY ECA FOR GERMANS IS NOT NEW, BUT RESEARCH PROMISES PROGRESS," by Waldeman Kalmpfert. Following are excerpts from this article:

"We have to take with a grain of salt the report from Frankfurt, Germany, last week which told of some synthetic foods developed by the ECA for hungry Germans in particular and middle Europeans in general."

"It turns out that one of these supposedly revolutionary foods is nothing but a sausage. Fifty percent of it is meat of some kind and the rest is vegetable protein. This ought to be a good food; but it is nothing to create any excitement, considering that the Germans have been eating all kinds of more or less 'synthetic' sausages for centuries."

"Science is still far from having achieved a true synthetic food, if by that we mean a food which is not derived from any animal or plant. If it were possible to make a true synthetic protein, the way would be cleared for thousands of new products which would take the place of meat, eggs and milk, etc."

Not satisfied with leaving the situation as previously reported, the editorial page of the New York Times on February 21, 1949, ran an editorial entitled "GERMANY'S ERSATZ FOODS." The article ridiculed the idea that the development in Germany was particularly outstanding, and also reflected a misunderstanding on the use of 20 million dollars, (loosely worded in the original article). Two short excerpts from the article are quoted below:

"Mr. Garnett soared high when he proclaimed that the new food Ersatz is 'potentially the greatest invention in human feeding since people began to cook.' But what is there remarkable about a "new meat" which consists of 50 percent ordinary meat or fish and 50 percent vegetable protein prepared in the form of sausage? A piece of Italian salami bought at any local pizzeria in New York or Chicago is just as remarkable, etc."

"Probably the Ersatz products so highly praised will do much to meet the food shortage in Germany and other countries, but we trust that the 20 million which has been made available by the ECA Administration for National Food Research will not be spent on making a new kind of salami or something that looks like milk, etc."

As a result of these happenings in the New York Times and other American newspapers, Garnett was beginning to receive a flock of letters, some of them angry in tone, from the American Meat Institute and other parties concerning the details of the program. He felt called upon to clarify and justify his original statement in a letter to reporter Jack Raymond. Following are excerpts from this communication:

"I gather from your letter of 26 February that you have some misgiving over the statement, "This is potentially the greatest innovation in human feeding since people began to cook." You were good enough to take the statement without question. I am only too glad, therefore, to give you my basis for that statement.

"The statement rests on two aspects of the product. First it is more an innovation from the standpoint of mass human feeding than in scientific research as the statement itself implies. It can best be understood by comparing it to margarine. If the populations of the world today were dependent alone upon butter and lard without margarine, millions of people would be fat-hungry. People were hungry for fat and all the resistance and lobbies in the world have broken in the face of this human want. The innovation of margarine into human feeding is at least a reality, not as a butter substitute but as an independent product to supply needed fat for millions of people throughout the world at low cost. Vegetable protein products are potentially an even greater innovation than margarine because the nutrients they contain are more essential to human life.

"Never in recent history has the production of animal proteins been sufficient to cover adequately the protein requirements of mankind. Less per capita is in prospect for the future. Those animal proteins that have been produced have been inequitably distributed. The new vegetable proteins give a new hope - a palatable food containing the essential human nutrients of animal products can be provided for millions at low cost. Such new products will come, not as a meat substitute but as an independent product to supply needed protein for millions of protein-hungry people throughout the world at low cost.

"The second basis for the innovation statement stems from the nature of the product itself. Potentially the product is a basic food item. Unlike margarine, sugar or other basic foods, it is composed of many ingredients. As scientific knowledge increases and new elements or new proportions are found desirable for human nutrition, the nature of these products adapt them as conveyors of these needs to the human body. They are now and can become more so as science advances, ration balancers, etc."

The furor in the papers finally died down of its own accord, and Garnett quieted the meat and scientific publics by long letters explaining the true situation in Germany. The American meat interests apparently were placated once they were assured that there was no intention to replace meat in the diet with a vegetable protein food, and that Garnett had been misquoted in saying that "all proteins were the same" and that "we can even produce roast beef so that you would not know the difference from the real thing." He also had to clear up the misunderstanding on the 20 million dollars which the meat people had interpreted as solely for the purpose of promoting research on Soya Wurst and the like in Germany.

Retrospect - Through the Eyes of a Military Government Officer

Let us return to the story in Germany. One military government officer in looking back on the program depicted the developments as follows:

"The troubles that developed were reflected gradually from various parts of Western Germany. At first, they seemed of relatively minor importance and no one paid much attention to them. Indications of trouble took many forms. One of the main forms which was not recognized for some time was simply inactivity. Nothing happened. When asked for an explanation of the lack of progress, German officials passed over the situation by replying that it takes time to make arrangements, to get under way with production, and the like. In other cases, it was reported that a veterinarian here or there was raising questions on the legality of producing and selling the new product. There might be some delay, the officials said, to make necessary changes in legislation. Eventually some officials began to report difficulty in getting butchers to undertake the manufacture of the new product.

"The staff of food and agriculture in Military Government had many tasks to perform. The Soya Wurst program was one of many. While it was important, there were others more important. Thus the fact that difficulties in promoting the Soya Wurst program were assuming serious proportions did not penetrate for some time, especially as a result of the nature of the reports of the troubles that came trickling in and Military Government's expectation that the program would go forward without further difficulty.

"German officials were reluctant to report troubles in getting underway. Many were unenthusiastic about the program, but no particular complaints on the merits of the program were made openly to Military Government. It was only after weeks had passed that the picture became clear to Military Government workers and the 'blind spots' removed. Then came a feeling of frustration, a sense of having been sabotaged somehow.

"In retrospect it can be said that the attitudes and opinions of the German officials in regard to the program varied, resulting in the German

administration being pulled in many directions in trying to establish a course of action. There were some officials who felt Germany should have the best - not a substitute product; there were those who feared the program would jeopardize the demand and price for meat and the de-rationing of meat; there were some who feared foul play (product could only be tested in laboratory); there were those who were in favor of the program for reasons of profit; and there were those who were in favor of the program to help the poor. And there were others who thought the Americans were trying to dump a lot of poor-grade soya flour down the German throat. However, this depth in cleavage of attitudes within the German administration appeared to become less as time progressed, eventually approaching a solid front in opposition to the program.

"The attitude of the Butchers' Guild was essentially one of opposition from the beginning, although it took some time for the knowledge of this attitude and its intensity to be fully appreciated. It was reflected in difficulty in getting butchers to cooperate in the program. The intensity of the Guild's attitude and the strength of the Butchers' Guild was later displayed when it forced volunteers to withdraw from the program in some instances. The Guild wanted meat removed from the ration; it thought that the production and sale of Soya Wurst at cheap prices would hurt its chances of de-rationing meat and at the same time would lower the profits of butchers. More importantly, perhaps, cooperation in the program would mean frequent visits of public health officials and veterinarians to check on the processing of Soya Wurst. Many butchers did not relish this idea at a time when black market activities in one form or another were extremely profitable.

"The official veterinarians took a stand in opposition to the program because it violated their institutionalized legal creeds. Their codes were in jeopardy. It was simply against the law to sell substitute foods of such nature. They feared foul play - how could you tell what a butcher might do - what he would put in the sausage? All of these things along with the strong prejudice of the consumer against soya spelled the ruin of the program."

The military government officer summarized, "The pattern of developments was remarkably uniform throughout the various areas of Western Germany. Faintly optimistic reports on the part of German officials in the beginning were interpreted as successful launchings of the Soya Wurst program by the British and the Americans. This was followed by delays and troubles of all natures as indicated. The difficulty in finding butchers to help manufacture the product, the resistance of the veterinarians, the bad reputation of soya, the lack of knowledge and understanding of human nutrition on the part of public officials and the consuming public, the difficulty in getting land legislation changed to permit the manufacture and sale of the product, the opposition of the Butchers' Guild, the change in attitude of public officials from lukewarmness to opposition in many cases, the inability to get strong press support, and the inability to get through to the consuming public in some cases for a fair trial of the product - all these things spelled defeat." 6/

6/ Interview with the Chief of Food and Agriculture Branch, Office of Military Government, Bremen.

Lessons for the Future

The final death stroke to the Soya Wurst program came with the de-rating of meat by the new German government in the fall of 1949. By the spring of 1950 the production of Soya Wurst had diminished to practically the vanishing point and by summer the program had completely collapsed. Meat, in the meantime, had become more plentiful and retail prices, though still high, had dropped to some extent. The need for the program had decreased. How should such a program be evaluated? The thoughts of Mr. Garnett, Dr. Bening, Dr. Hensen and Mr. Nerger coincide to a considerable degree in what went wrong with the program, and concerning methods and techniques that might have made the project more successful.

There is agreement among the promoters of the project that, technically, they had accomplished what they had set out to do: they had developed a soya sausage that was the equal of an all-meat sausage in every respect and yet cost 30 to 40 percent less. They also agree that the need for the program in Western Germany was not so acute as Military Government had originally thought. Despite predictions to the contrary, the supply of meat had increased considerably and the price had dropped. As it turned out, the Butchers' Guild was more nearly correct in its appraisal of the situation than the official statistics, or, even the adjusted (higher) estimates by military government. In fact; the program came too late: had it been in effect in the early years of the occupation, when it was particularly needed, its success probably would have been assured.

However, the program leaders point out that there will always be poor people and that in the long run there will always be a real need for foods of this type that are nutritious and inexpensive. Garnett remarked, "As to the over-all evaluation of the program there is no doubt in my mind that for poor and underprivileged people, there is a great need for cheaper forms of protective nutrients, a cheap protein carrier together with the vitamins and minerals usually associated with it. Completely new foods should be developed containing in the most inexpensive forms these protective foods. Such a development has in my opinion great possibilities in attempting to equate protective diets to income levels."

In reminiscing about the opposition groups and obstacles that hampered the program, Dr. Bening concludes that the meat manufacturers, with the exception of Nerger, were against the program because they could not make as much profit selling Soya Wurst as an all-meat sausage.

In his opinion the veterinarians and food control chemists opposed the program for personal and professional reasons. It was their duty to protect the consumer. They claimed that they could not control the amount of soya in the sausage because the laboratory facilities at their disposal were inadequate for determining the exact contents of the sausage. Under such circumstances, they said, what might the meat manufacturers and butchers do? Some were also opposed to the program in principle: sausage should be meat; if it has something else in it, then it was not sausage. And finally, in Bening's opinion, the veterinarians were against the program also because they saw it as a threat to their income, which came largely from inspection fees on meat.

According to Bening, the general opposition of the Butchers' Guild was based on several counts. The butchers wanted to have meat taken off the list of rationed foods; they believed that there was more meat on German farms than

Military Government realized. They wanted price increases on meat and were opposed to anything that might prevent higher prices and derationing. Why sell Soya Wurst so cheap? Consequently a number of butchers tried to make more money by selling soya sausage at all-meat-sausage prices and, in so doing, collected full meat coupons. Government control was inadequate to prevent such abuses. Word of such happenings eventually reached consumers, to the detriment of the program.

Dr. Bening pointed out that consumer reaction to the word "soya" was partly ill-founded. In prewar years Germany had had "bratlings," meatless hamburgers, which the soldiers and population had relished. They were vegetable hamburgers made from cereals, yeast, and full-fat soya flour. But by 1941 soybean stocks were exhausted and the "bratlings" had to be made without soya flour. The people did not like the taste of these nonsoya hamburgers and blamed their unpalatability on the soya content, not realizing that the trouble was based on a lack of soya.

This experience, along with the unsuccessful trials of Soya Wurst by the German army and the dislike of the people for soya flour in bread, had created a bad reputation for the term "soya."

If the clock could be turned back and the program repeated, Dr. Bening would make sure that -

1. The German officials were better informed on the program and convinced of its virtue.

2. The program was portrayed not only as a solution to a protein problem but as an aid to German groups and interests, i.e., emphasis would be put on the use of German products in Soya Wurst in order to obtain the cooperation and assistance from German agriculture and food industries.

3. A thorough program of public education on nutrition was carried out in conjunction with the Soya Wurst project. Changing food habits is difficult, particularly in countries where little attention has been given to nutrition education. In Dr. Bening's opinion, the American housewife has become nutrition-minded through nutrition education and is willing to try new food products. The German housewife, on the other hand, at the time of this program, was not nutrition-minded and not receptive to the idea of trying new food products. This was a large factor in the failure of the Soya Wurst program in his estimation.

Dr. Hensen, of the Ministry of Food and Agriculture, concurs in large measure with Dr. Bening's analysis. He lists his main reasons for the failure of the program as follows:

1. The lack of consumer education in nutrition. Likewise people were tired of ersatz foods, and remembered distinctly the war experience, and the failure of adding soya flour and corn flour to wheat and rye flours in making bread.

2. The timing of the program. In his opinion it was two to three years too late. After currency reform people could earn real money again and were willing to spend it for meat.

3. The quality of the soya used in the Wurst was poor in a few cases, resulting in a low-quality sausage.

Henry Prentice, an associate of Mr. Garnett in Military Government, concurs in some of the above analysis, but not in its entirety. Though not an active participant in the program, he was near the scene of operations and able to observe developments closely. Prentice makes the following points: (1) That he did not know anyone in the German Ministry of Food and Agriculture who was very keen over the program except Hensen; (2) that soya had a bad reputation with consumers; (3) that the promotional aspects of the program were handled improperly; and (4) that the program got started two to three years too late.

It is Prentice's belief that the program's chances for success would have been boosted if (1) the initial sales effort had been restricted to a small area, thereby testing the product out on a pilot basis before embarking on a large-scale distribution program; (2) government officials and consumers had been sold more effectively on the merits of Soya Wurst; (3) the program had been placed on a clear-cut money-making basis with producers and distributors to gain their support; (4) more Germans and Americans had been brought into the planning and execution of the program.

Mr. Prentice feels that the program should have provided for (1) initial sales efforts in only one state; (2) a relatively low content of soybean flour in the sausage; (3) sale of the Soya Wurst off the meat ration; (4) subsidies or guarantees to producers and distributors against financial losses.

How does Mr. Nerger feel about the program? He looks with pride on the technical achievements that resulted in an excellent Soya Wurst. In many ways he feels that the program and the movement were his own, a feeling that is understandable in consideration of his contribution - in funds, in technical development of the product, and in his efforts to promote the sale of Soya Wurst. He remains bitter toward the opposition groups who, in his opinion, sabotaged the program. He feels that the official veterinarians and public-health people were unfair and negative in their approach to the sale of the new product. He agrees that they had to enforce the laws but feels that, even so, they could have been more helpful and thus made the situation less difficult.

He objects, for instance, to the markings they insisted upon for the Soya Wurst package - not only must it bear the word "soya", but it also had to be specially striped in green. ^{7/} This marking, he claims, implied an inferior product and immediately distinguished purchasers as people who could not afford all-meat sausage; no housewife mindful of her prestige among her neighbors would be seen buying it. Instead of resorting to such marking, he contends, veterinarians could have maintained a check on his factory and permitted the product to be named Konsum Wurst (consumers' wurst), just as a bread in Western Germany is called consumers bread. Nerger believes that the price differential between the Soya Wurst and the all-meat sausage was enough in itself to distinguish the products.

^{7/} Eventually a few States permitted the use of the name "Sausage with Plant Protein and Lard." By this time, however, the program was collapsing rapidly.

He likewise remains bitter toward his fellow meat manufacturers who not only refused to cooperate in the program for reasons already given, but who tried to ruin him financially by exerting pressure on his sources of credit. And finally he is bitter toward those butchers who took advantages of the situation and sold Soya Wurst as a full-meat sausage, collecting money and meat coupons on that basis.

Mr. Nerger lists the causes for the failure of the program in the following order of importance:

1. The distinctive package.
2. Sabotage by the meat industry.
3. Abuses practiced by some butchers, who sold the product.
4. The lack of laws in the various states permitting its sale since the federal government was powerless to issue any directives to the states on the matter.
5. The poor timing of the program.
6. The lack of nutrition education.

If the program were to be repeated under similar circumstances, Mr. Nerger would begin it in a small way, and gradually expand it. He would himself manufacture the product and not depend on butchers to complete the process. And, he would do everything he could to carry out an educational campaign on the nutritional merits of Soya Wurst.

Finally, how does Mr. Garnett feel about the program and why it failed? With one important exception, he agrees with the analysis of Bening, Hensen, and Nerger. He feels that the first error was made in deciding to sell the product as meat, for out of that decision grew the strong opposition from veterinarians and the Butchers' Guild. Garnett gives his other major reasons as follows:

(1) The previous unpleasant experience of the German people with soya; (2) the lack of knowledge among German people of human nutrition and the failure to provide for a nutrition program; (3) the desire of German officials and butchers to remove meat from the list of rationed foods and the attendant thought that adoption of the Soya Wurst program would defer removal; (4) the failure to give sufficient thought to a legislative base in order to avoid the appearance of trying to break the law under the guise of an emergency; (5) the attempt to introduce the product on a country-wide basis instead of on a small scale in favorable spots; and (6) the time element. Mr. Garnett feels that the need for the program was great at the beginning of the planning process but tapered off, in the long period that it took to solve technical problems, because food conditions greatly improved. 8/

8/ MSA officials feel that Mr. Garnett's analysis is somewhat more accurate than the analysis of Bening, Hensen, Nerger and Prentice.

Garnett is disappointed that the program did not succeed in 1949-50 but he is not discouraged. He regards the outcome as a temporary setback. He is sure that a similar program will succeed eventually. He points out that the cost of the Soya Wurst effort was small, and its chance of succeeding was well worth the risk and effort. Expenses to Military Government were minor; they involved travel expenses of two technicians to the United States, the allocation of several hundred tons of raw material to the project, and the provision of 300 to 400 tons of seasoning materials.

Future Possibilities of the Program

Some observers feel that Garnett's prediction about the future of soya wurst, and similar products, may soon be borne out by actual developments. Nerger, who has continued his experimental work to improve soya wurst, was asked by the British in the spring of 1952 about the possibilities of beginning a soya-meat program in England. A contract has been signed, calling for Nerger's participation in a short experimental project in England; this is to be followed by commercial production. The plan specifies that the first efforts will be devoted to developing a breakfast sausage of soya flour and meat. If these efforts are successful, and Nerger has high hopes that they will be, other types of sausages will be developed.

Conditions in Western Germany have changed since the failure of 1949 and 1950. Dr. Hensen, Dr. Bening, and Mr. Nerger feel that the time to launch a new Soya Wurst or similar program may not be too far off. ^{9/} They report that the housewife appears to be more nutritionally minded and is in the mood to try ersatz products once again - if, by so doing, she can save money for other household expenditures. They feel confident that the next campaign will succeed.

^{9/} It should be pointed out that many Mutual Security Agency officials do not share this optimism. They feel that, unless another food crisis develops, it will probably be a long time before there is any real opportunity for Soya Wurst to be given an adequate "trial and acceptance" run on the German food market.

